1.10.5. Select the correct answer

- In a relational model, consider the following ER-to-Relational transformation rules:
- An entity with a primary key is converted to a relation.
- 1:N relationships are converted by adding a foreign key in the "many" side referencing the "one" side.
- M:N relationships are converted to a new relation.

For the following ER diagram:

- Entity: Department(DeptID)
- Entity: Employee(EmpID)
- Relationship: WorksFor (M:N between Employee and Department)
- What would be the resulting relational schema for the "WorksFor" relationship?

Employee(EmplD, DeptlD)

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- WorksFor(EmpID, DeptID)
- Oepartment(DeptID), Employee(EmpID, DeptID)
- Department(DeptID), Employee(EmpID), WorksFor(EmpID, DeptID)
- WorksFor(EmpID, DeptID, JoinDate)

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bookings, passenger details, and available flights.

The relational database schema defines the structure and constraints for flight and booking data, while the relational database instance stores real-time information such as current





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numbers. The relational database instance defines the logical structure for flight bookings, while the relational database schema stores specific booking details like passengers' names and flight

Changes to the relational database instance (such as adding a new passenger to a flight) automatically require changes to the relational database schema.

Multiple Choice - Single Answer

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Hide Answer

In a retail database, the schema for the Products table is defined as follows:

Products(ProductID, ProductName, Category, Price)

A query fetches the current list of products and their prices:

ProductID	ProductName	Category	Price
P001	Laptop	Electronics	50000
P002	Mobile Phone	Electronics	20000
P003	Headphones	Accessories	3000

Which of the following is true regarding the fetched data and its relation to the database schema?

- The fetched data is a part of the database schema.
- The fetched data indicates a change in the database schema.
- 0 The fetched data represents a snapshot of the database instance
- The fetched data shows the physical organization of the database.
- The fetched data demonstrates schema normalization



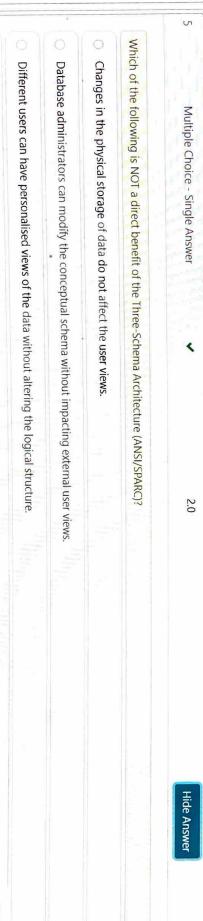






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5 Multiple Choice - Single Answer	Add a weak entity JointOwners	 Change Owns to a ternary relationship 	Allow Owns to have multi-valued attributes	No changes needed	 Add a JointAccount entity with attributes shared by all owners 	In a banking system, consider the following ER model: • Entity: Customer (CustomerID, Name) • Entity: Account (AccountID, Balance) • Relationship: Owns (Customer → Account) Each customer can own multiple accounts, and each a ER model be modified?	4 Multiple Choice - Single Answer
le Answer	Add a weak entity JointOwnership with CustomerID and AccountID as foreign keys	onship	d attributes		attributes shared by all owners	In a banking system, consider the following ER model: • Entity: Customer (CustomerID, Name) • Entity: Account (AccountID, Balance) • Relationship: Owns (Customer → Account) Each customer can own multiple accounts, and each account must be owned by one customer. If a Joint Account ER model be modified?	Answer
2.0	ign keys					y one customer. If a Joint Account is introduced, which can b	2.0
Hide Answer						is introduced, which can be owned by multiple customers, how should the	Hide Answer





Users need to be aware of the physical storage details, such as data compression or encryption.



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O Variability	Velocity	O Veracity	In stock market trading systems, which data characteristic ensures transactions are processed in real-time?	7 Multiple Choice - Single Answer 🗸 2.0	○ End User	Application Developer	Data Scientist/Analyst	O Database Administrator (DBA)	The marketing team needs to pull detailed reports on customer purchasing behaviour, such as frequently bought items, to target their campaigns. Which of the following would likely use complex SQL queries and deep data analysis techniques to get this information?	You're part of a development team in a large e-commerce company that has a complex database system handling everything from inventory management to customer analytics. The company has different user roles interacting with the system based on their specific needs.	6 Multiple Choice - Single Answer 🗸 2.0
			real-time?	0 Hide Answer					equently bought items, to target their campaigns. Which of the following would likely use	e system handling everything from inventory management to customer analytics. The	Hide Answer



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Multiple Choice - Single Answer

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9 students and courses is represented in a relational schema with the following tables: A university database maintains information about students, courses, and instructors. Each course is taught by an instructor and enrolled by multiple students. The relationship between Student(StudentID, Name, Major) Multiple Choice - Single Answer 0.0 **Hide Answer**

0 Primary Key and Foreign Key Relationships

Which of the given relational model components is being implemented in the schema above?

 Enrollment(StudentID, CourseID, Grade) Course(CourseID, Title, InstructorID)

- **Entity Integrity and Domain Constraints**
- (3) Referential Integrity and Candidate Keys
- 0 Normalization and Functional Dependencies
- 0 **Redundancy Elimination and Tuple Constraints**

10 You are tasked with ensuring the library database can efficiently manage book loans. Which of the following statements best describes how the tables and data are structured? Multiple Choice - Single Answer < 2.0 **Hide Answer**

- The "Books" table should store the loan date and return date, while the "Loans" table should only track book IDs and member IDs
- The "Members" table holds contact information, and the "Loans" table links a member to a book using member_id and book_id to track which book was borrowed by which member.
- The "Books" table requires a loan_id as a primary key to prevent multiple loans of the same book

The "Loans" table should contain the title of the book and the name of the borrower, making it unnecessary to join the "Books" and "Members" tables.







